FAIRBANKS AREA FORESTRY

ORIENTATION GUIDE 2009

Mission Statements

The mission of the Division of Forestry is to develop, conserve, and enhance Alaska's forests to provide a sustainable supply of forest resources for Alaskans.

- Protects water quality, fish and wildlife habitat, and other forest values through appropriate forest practices and administration of the Forest Resources and Practices Act;
- Manages a wildland fire program on public, private, and municipal lands;
- Encourages development of the timber industry and forest products markets;
- Manages the Haines and Tanana Valley state forests (over two million acres);
- Conducts timber sales for personal and commercial use and for fuel-wood;
- Administers the Community Forestry, Conservation Education, Forest Health, and Stewardship programs;
- Gives technical assistance to forest landowners.

The mission of Fairbanks Area Forestry Fire Operations is to protect lives and property, prevent man caused fires, and conserve, enhance, and facilitate the care of Alaska's forested lands.

- Our top priority is Firefighter and Public Safety;
- Public Fire Education;
- Structure Fire Department wildland training;
- Suppression of Urban Interface Wildfires;
- Suppression of wildland fires;
- Prescribe fire for forest health, fuels management, and habitat enhancement;
- Interagency initial attack fire support;
- Development and support of Emergency Firefighter programs.

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FAIRBANKS
FAF
AREA FORESTRY

Introduction

Welcome to the Fairbanks Area Forestry (FAF), Alaska Department of Natural Resources (DNR) – Northern Region. We hope you enjoy working for the Division of Forestry (DOF) and find this helpful in familiarizing yourself with our area.

The Fairbanks Area Forestry office is located on the corner of Airport Way and University Avenue, on the same campus as the State Northern Zone Regional Office, State Logistics Center and the Bureau of Land Management's Northern Field Office support center. The main base of operations consists of the statewide warehouse, shop maintenance facility, dispatch center, operations, readiness buildings and Helibase.

Fairbanks Area Forestry is responsible for wildland fire protection of approximately nine million acres between the Chatanika River drainage in the north and Cantwell to the south; and from Kantishna River in the west to the Yukon Charley Rivers National Preserve in the east. The Fairbanks area is a combination of rolling hills, low mountains, and tundra flats. The flats dominate the south and west. Hills and low mountains are in the north and east.

Robert Schmoll, Fire Management Officer, is the chief of the fire organization and sets priorities for this area's fire work force. He supervises twenty-eight seasonal forestry technicians during the fire management season, from May through September. In addition to suppressing wildland fires, the forestry technicians also provide educational prevention programs throughout the area.

The area burn permit program is a free service that benefits landowners and forestry by reducing false alarm call-outs and hazardous burning procedures. Approximately 82% of the area fires are caused by humans, mostly as a result of land clearing. This demonstrates a continuing need to educate the public. The remaining 18% are lightning-caused fires, occurring mostly in the hills around Fairbanks.

Many highly proficient emergency firefighters are available as a result of Fairbanks Area Forestry's quality EFF program. There are four designated 16-person organized Type II Emergency Fire Fighter crews available through the Fairbanks area.

The dispatch and logistics center for Fairbanks Area Forestry is located in the area office building on the Chena River. The area dispatch office is responsible for coordinating initial attack dispatch, monitoring extended attack fires, collating fire intelligence, and providing logistical support for the area.

The Fairbanks Area Forester, Marc Lee, supervises fire and timber management programs. Jeremy Douse, the Area Resource Forester and his staff supervise the resource program. They administer and manage state timber lands, providing firewood, house logs, and commercial timber sales.

The office of State Forester Chris Maisch is located in Fairbanks along with Lynn Wilcox, Chief of the States Fire and Aviation program. The division also has a central office in Anchorage to provide policy and program direction, two regional offices, and eight area offices responsible for program support and fieldwork.

Alaskan statutes bind the Division of Forestry and administrative code sections that directly govern forest management activities on state forested lands.

Protection Considerations and Priorities

An interagency fire management plan classifies Alaska's land for fire management purposes. The classification determines the level of response to fires. Land in the Fairbanks area falls into the following protection levels:

Critical	.32 million acres (4%)
Full	2.20 million acres (27%)
Modified	1.42 million acres (18%)
Limited Action	4.12 million acres (51%)
Total	**8.5 million acres**

Land ownership is primarily State with Private, University, Borough, and Native holdings. Most structures within a 30-mile radius of Fairbanks are primary residences. Active mining claims and remote cabins are abundant in the hills and along the roads and river corridors throughout the area. The population centers of Fairbanks, North Pole, Moose Creek, Fox, Ester, Anderson, Nenana, Healy, McKinley Village and Cantwell are within Fairbanks Area Forestry's protection. Because of potential urban interface type of incidents, approximately 300,000 acres have been identified as critical protection.

Valuable capital resources in the area include the Trans-Alaska Pipeline, Inter-tie power line, the North Pole Refinery complex, Knox Mine, numerous ammunition and chemical storage facilities, and 200 miles of the Alaska Railroad with facilities. The Fairbanks International Airport is the major air transportation hub for the Alaskan Interior. Damage to the Trans-Alaska pipeline would result in millions of dollars in lost revenue per day.

Eielson AFB is a major support base for Strategic Air Command and home of Cope Thunder and Red Flag, major national and international aircraft combat training programs. Fort Wainwright is the home of two Striker Brigades and a new Aviation Battalion. Fort Wainwright airfield is a major Department of Defense Striker Infantry Brigade deployment location. Clear Air Force Base is the site of a NORAD early warning system. Closure of any base would have national security implications.

Many tourists visit the numerous borough, state and national parks and refuges. Denali National Park is a major attraction within the protection area. In addition, almost one million acres of the Tanana Valley State Forest and commercial timber sales are scattered in the area. The land base is also valuable for recreation, agricultural development, habitat resources, and other uses.

Fire Behavior & Potential

On average, large project fires exceeding 1,000 acres occur every other year. Expenditures for these fires can exceed millions of dollars in suppression expenditures. Through a cooperative agreement with local fire departments and the Alaska Fire Service, 95% of fire starts are kept below 10 acres in size.

Historically, 78% of the areas' fires occur between April 30 and August 1, with the heaviest fire activity occurring during the month of June. High temperatures, with little or no precipitation, characterize typical Interior Alaska weather during this time. During these periods, temperatures in the 70's to 80's, humidity's, can reach a low of 14%, with average rainfall of 3.78 inches. Established weather patterns tend to remain, and either help or hinder suppression efforts, depending on whether they are strong, high pressures or wet, low fronts.

During these conditions fires may show a high resistance to control and usually take an average of one burning period to completely suppress. There is an average of twenty days per month, during May, June and, July with winds exceeding 10 mph. Windy conditions can lead to a rapid rate-of-spread. Red flag warnings are not uncommon during these periods.

Extensive black spruce is the main hazard fuel. Stands of mature white spruce, hardwoods, and mixed conifer forests can also make suppression efforts difficult. Tundra vegetation can be a main fire carrier, with peat fires sometimes requiring several burning periods to extinguish. Light fuels can get extremely dry after the snow melts away, and can remain so, even after the leaves are out on trees.

The State of Alaska uses the Canadian Forest Fire Danger Rating System to calculate fire potential, conditions and behavior. We do this, as the fuel models in Alaska are more similar to the Canadian fuels then the fuels in the contiguous 48 states. The system is composed of six standard components. These components are used to calculate the Fire Weather Index and produce several other indices that have valuable information regarding fire behavior. A short primer is located in the appendices.

Properties & Resources

Life and Property: Fire Fighter Safety, with Life and Property are the highest priority in the Fairbanks Area. Most structures within the Fairbanks Area are on the road system, and are primary residences. Most significant human activity and development occurs within 30 miles of Fairbanks. In addition most development of mining claims and remote cabins are in the hills and along the river corridors throughout the area.

Capital Resources: Capital Resources in the Fairbanks Area include the Trans-Alaska Pipeline with 2 pump stations and 4 valve stations, major inter-tie power lines, the North Pole Refinery complex, The University of Alaska Fairbanks Campus, the Fort Knox Mine, Usibelli Coal Mine in Healy, McKinley Village, numerous ammunition and chemical storage facilities, and 200 miles of Alaska Railroad track and facilities.

Natural Resources: The Tanana Valley State Forest and includes approximately 1.8 Million acres of land. There is an average of 60 commercial timber sales scattered along the river bottom and hills each year. The State of Alaska, Minto Flats Wildlife Refuge consists of 500,000 acres of prime ecological sensitive wildlife habitat. This land base is also valuable for recreation, land disposals, agricultural development, and wildlife habitat.

Cooperators

Federal: Fairbanks Area Forestry also works cooperatively with the Alaska Fire Service (AFS) for initial attack support. Overhead and aircraft are shared during high fire danger and overload periods. Fairbanks Area's helicopter, helitack personnel, and engines are used frequently in support and back up of AFS smokejumper operations.

Structure Fire Departments (SFD): Extensive interface with rural fire departments occurs regularly within Fairbanks Area Forestry's boundaries. Cooperative agreements are in effect for 14 local fire departments whereby assistance is rendered during extreme fire situations. The local fire departments provide back up for Division of Forestry and suppress approximately 60 wildland fires per year within their own areas of responsibility.

Socio-Economic Considerations

Employment: Fire fighting and support is a major summer employment resource for many rural areas in Alaska. Fairbanks Area Forestry has four designated Type II Crews that are utilized throughout the fire season. They can be assigned to other areas of the state and lower 48 states, on a rotating basis through the Alaska Interagency Coordination Center (AICC). Additionally, Fairbanks Area Forestry employs Emergency Fire Fighters (EFF) in a variety of positions throughout the season during high fire activity, both in and state and as overhead resources for the lower 48 states.

Transportation and Safety: Eielson A.F.B. is a major support base for Strategic Air Command and an alternate for space shuttle emergency landings, Fort Wainwright Airfield is a major D.O.D. Rapid Infantry Brigade location, and Clear A.F.B. is the site of a NORAD early warning system installation. Excessive smoke can be detrimental to the point of closing airports and disrupting the quality of the signal of the early warning system. Closures at these installations could have national security implications.

Fairbanks International Airport is the major transportation hub for interior Alaska, and is located within the Fairbanks Area. Closure due to excessive smoke would negatively impact both urban and rural communities alike, in areas such as tourism, international cargo flights, day to day commerce with interior villages, air emergency and medical transport services.

Damage to the Alaska pipeline could result in millions of dollars of lost revenue, and highway closures would negatively impact state tourism and local economies.

Economic Stimulation: Local vendors are used extensively for purchase of supplies and equipment. After large fires the “morel mushroom” pickers find a lucrative harvest for national and international markets.

Support Difficulties

Difficulties include communications problems due to topography, repeater and cell tower placement. Distance and travel time for inter and intrastate for overhead and crew orders. Remote area, off-road access may require para cargo or rotor wing support. The retrieval of smokejumpers, during high fire activity may cause a delay in use of aerial resources. Late season weather may hamper the delivery or removal of resources. IC’s please prioritize your resource orders, to make sure you get required items.

Fairbanks Area Forestry Prevention Program

Fairbanks Area Forestry maintains an aggressive wildfire prevention program designed to reduce the average number of human caused fires on all forested land within the Fairbanks Area.

The Prevention Program provides the community with a variety of educational programs and materials. Prevention Technicians visit schools, maintain a booth at the local fair each year, and visit homeowners.

The FAF Prevention Technicians issue burn permits, violation warnings, and violation citations. In addition to being responsible for enforcement, they are part of our initial attack force.

Terminology

A **Burn Suspension** is not the same thing as a **Burn Ban/Closure**.

A ***Burn Suspension*** applies to *permitted* burns only (Burn Barrels, 10' X 10' Debris Piles, Lawn, Class A, B or C permits issued by the State Division of Forestry). Warming fires and campfires are not affected by a burn suspension and are therefore allowed.

A ***Burn Closure*** is a ban on ***all*** open burning and includes warming fires, campfires and approved burn barrels for a period of time. This only occurs during the highest of fire dangers and requires all fires to be extinguished immediately. A "***Burn Closure***" is designated by the State Forester.

Fairbanks Area Forestry
2009 DUTY OFFICER SCHEDULE

The Fairbanks Area Duty Office can be contacted after hours or on weekends and holidays at the following numbers. The duty officer will change each Tuesday at 0800, please refer to the schedule below.

CONTACT NUMBERS FOR DUTY OFFICERS:

Name	Cell Phone	Home Phone	Office Phone	
Robert Schmoll	378 -1314	455-7297	451-2636	
Edward Sanford	378 -1321		4512634	
Arturo Frizzera	378 - 1318		451-2620	
ALTERNATES				
1st Bob Zimmerman	378-1332		451-2613	
2nd Avi Shalom	378-0587		451-2619	
3rd Mike Goyette	378-9657		451-2619	

ALTERNATE NUMBERS:

Fairbanks Area Burn Permit / Fire 451-2626 (24hrs)
Fairbanks Area Dispatch 451-2623 (24 hrs 4/01 till 9/30)
Northern Region Office 451-2680 (24hrs)

Schmoll	04/01 – 04/07		Sanford	07/21 – 07/28
Sanford	04/07 – 04/14		Frizzera	07/28 – 08/04 **
Frizzera	04/14 – 04/21		Schmoll	08/04 – 08/11 **
Schmoll	04/21 – 04/28		Sanford	08/11 – 08/18 **
Sanford	04/28 – 05/05		Frizzera	08/18 – 08/25 **
Frizzera	05/05 – 05/12		Sanford	08/25 – 09/01 **
Schmoll	05/12 – 05/19		Schmoll	09/01 – All Winter
Sanford	05/19 – 05/26			
Frizzera	05/26 – 06/02			
Schmoll	06/02 – 06/09			
Sanford	06/09 – 06/16			
Frizzera	06/16 – 06/23			
Schmoll	06/23 – 06/30			
Sanford	06/30 – 07/07			
Frizzera	07/07 – 07/14			
Schmoll	07/14 – 07/21			

**Depending on Fire Assignments / Seasonal Lay-Offs, Duty Officer may change

Fire Line 451-2626
Fairbanks Area Dispatch 451-2623
Fairbanks Area Logistics 451-2627

Fairbanks Area Dispatch-1(888) 615-2626

Fairbanks Area Admin. 451-2600

Telephone List for Area Personnel

FAF	Business	Contact
Area Forester	451-2601	Marc **Lee**
FMO	451-2636	Robert **Schmoll**
AFMO	451-2634	Edward **Sanford**
Lead Prevention	451-2629	Mike **Goyette**
Prevention	451-2631	Jeff **Smith**
Prevention	451-2625	VACANT
Lead Dispatcher	451-2620	Arturo **Frizzera**
Dispatch	451-2623	VACANT
Dispatch	451-2623	Bridget **Hardy**
Dispatch	451-2627	Kelsa **Shilanski**
Admin Clerk	451-2600	Tina **Donahue**
Admin Clerk	451-2635	Cynthia **Beatus**
Helibase	451-2613	Bob **Zimmerman**
Dozer Ops	451-2644/03	Danny **Whitlow**
Resources	451-2609	Gary **Reabold**
Resources	451-2610	David **Maxell**
Resources	451-2609	Vacant
GIS	458-6877	Tom **Kurkowski**

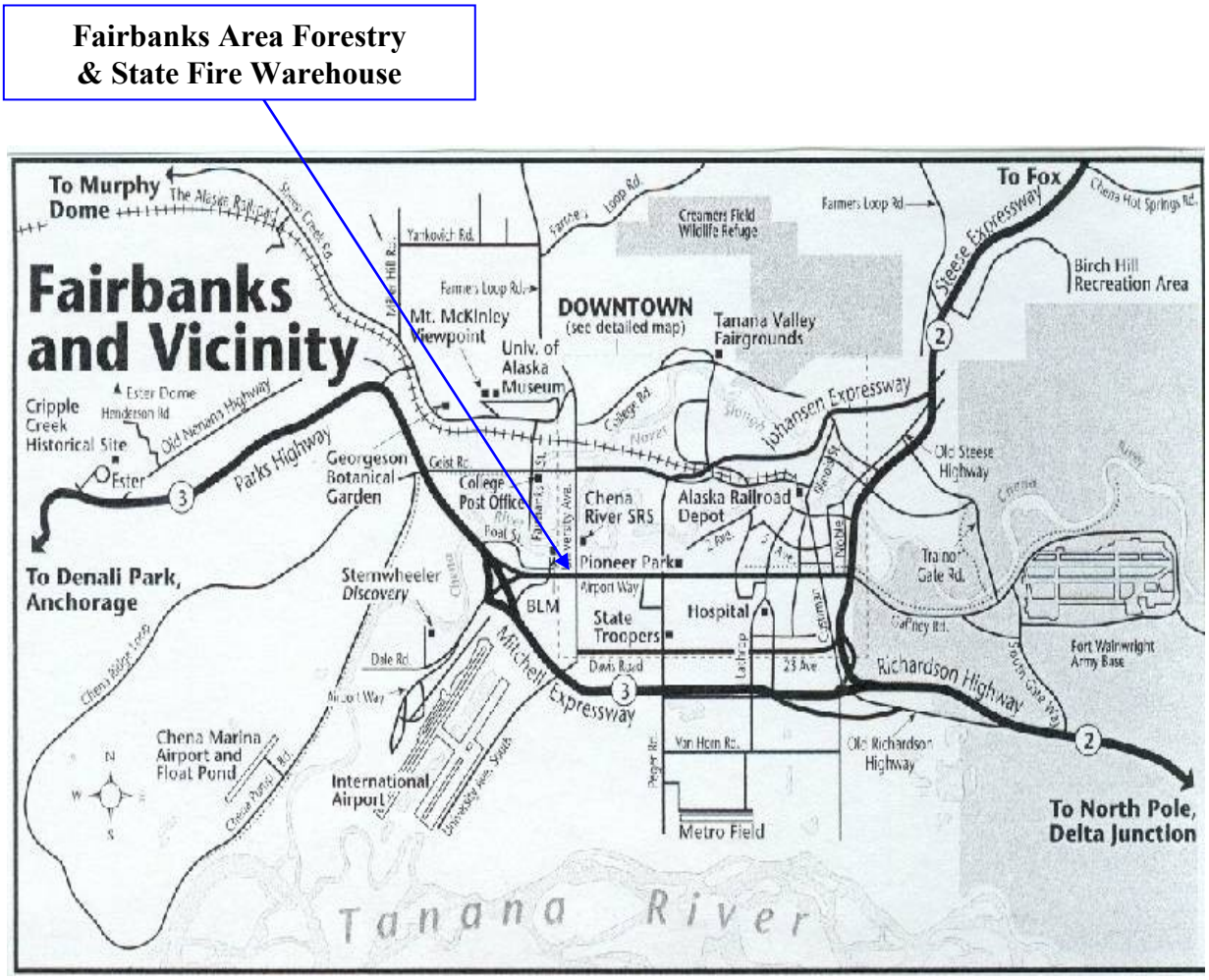
FAF	Business	Contact
Lead Operations	451-2619	Avi **Shalom**
Operations	451-2618	
Operations	451-2618	Christian **Blankenship**
Operations	451-2618	Kris **Brandenburg**
Operations	451-2618	David Zane **Brown**
Operations	451-2618	Shane **Carson**
Operations	451-2618	Eugene **Lee**
Operations	451-2618	Jen **Medl**
Operations	451-2618	Zach Horner
Operations	451-2618	Tom **Lesatz**
Operations	451-2618	VACANT
Operations	451-2618	Tim **Soliday**
Operations	451-2618	Tasha **Sullivan**
Operations	451-2618	Josh **Turnbow**
Operations	451-2618	Casey **Weter**
Operations	451-2618	Cameron **Winfrey**
Operations	451-2618	Nathan **Zalewski**

Engine Telephone Numbers

	Engine		Cell Phone
Lead Prevention	F-77	Mike **Goyette**	378-9657
Prevention	F-76	VACANT	378-9979
Prevention	F-75	Jeff **Smith**	378-9671
Lead Ops	F-72	Avi **Shalom**	378-0587
Ops	F-65		378-1283
Ops	F-66		378-1291
Ops	F-67		378-1297
Ops	F-33		378-1265
Ops	F-34		378-1269
Ops	F-35		378-1275
Ops	F-36		378-1277

Fairbanks Area Dispatch FAX 451-2633 Fairbanks Area Admin. FAX 458-6895

Office Location and Address



Dept. of Natural Resources
Fairbanks Area Forestry
3700 Airport Way
Fairbanks, AK 99709-4699

Main Line	(907) 451-2626
Fire Line:	(907) 451-2626
IA Dispatch	(907) 451-2623
Logistics Dispatch	(907) 451-2627
Dispatch Fax:	(907) 451-2633
Rail Belt	(888) 615-2626

E-mail: fas1@dnr.state.ak.us


N
US BLM Northern
Field Office
Chena River
FAF Helibase
University Ave
Fairbanks Area
Fire Operations
State Fire
Warehouse
DNR NORTHERN
REGION OFFICES
Airport Way

Radio Communications

Fairbanks Area Forestry Dispatch call sign is **"FORESTRY"**

ALL RADIOS ARE NARROW BAND COMPLIANT. DO NOT USE WIDE BAND RADIOS ON DIVISION OF FORESTRY OR FEDERAL FREQUENCIES.
ALL FEDERAL FREQUENCIES ARE PROGRAMED NARROW BAND.

Centracom Radio Console:

ALL FREQUENCIES ARE VHF-FM UNLESS OTHERWISE SPECIFIED

VHF Description	Location	Tx / Rx	Code Guard
Repeater A	Ester Dome	159.270 / 151.265	141.3
Repeater B	Nenana	159.300 / 151.295	141.3
Simplex	Murphy **	159.285 / 159.285	N/A
Repeater C	Healy	159.330 / 151.325	141.3
Repeater D	Canyon Creek	159.345 / 151.280	141.3
Mutual Aid	Fairbanks Area	154.295 / 154.295	N/A
Parks Chena Dome	Chena Dome Ester Dome	159.4500 / 151.3100 168.625 / 168.625 (N)	TX 103.5
USFS Air Guard			

AM

Air to Ground Ester Dome 132.450/132.450

AIR GUARD

Transmit and Receive 168.6250, Tone Guard 110.9

All Air Guard frequencies are programmed to operate in narrowband mode.

Repeater Locations

Repeater	Physical Location	Coordinates	Elevation
Ester Dome	9.2 miles West of Fairbanks	64 52 33 x 148 03 49	2364'
Murphy Dome	12 miles Northeast of Fairbanks	64 57 x 148 23	2931'
Nenana	1 mile North of Nenana	64 34 46 x 149 04 40	1100'
Healy	113 miles South of Fairbanks	63 50 13 x 148 58 38	1936'
Canyon Creek	2.5 miles Northwest of Canyon Shared with Delta Forestry	64 18 21 x 146 32 45	1762'

For mobile radio, and handheld radio frequency configuration, please see the Division of Forestry Current Year Frequency Guide Book.

2009 Trunk Radio Information

Fairbanks Area is testing a trunk radio system. This will be done for logistics, on case by case bases to be determined by the Logistics supervisor. Programming or reprogramming of additional groups may be added during the 2009 season. Check with dispatch.

NO INITIAL ATTACK ACTIONS WILL USE THE TRUNK RADIO SYSTEM; UNLESS ORDERED BY FMO, OR OPS FORMAN

Trunked Radio (ALMR)

Motorola Astro ALMR Base Station:

Zone	Mode	
FAB1		Fairbanks ALMR Talk Group
FAB2		Fairbanks ALMR Talk Group
DF1	FASL	Fairbanks Area Logistics

Wideband and Narrowband

Bandwidth Conflicts

Interference occurs when both wideband and narrowband radios are used communicate on the same channel or adjacent channels. Symptoms of bandwidth mismatches are evident in two ways: 1. Narrowband Communication on a Wideband Channel

1. Narrowband Communication on a Wideband Channel

– Received audio may be very soft and quiet.
– Caution, wideband radios must turn up volume to hear. However, once a second wideband radio transmits, the original wideband radio's received audio will become very loud.
– Audio may not be picked up (processed) by wideband receiver.

Temporary mitigation:

– Wideband radios must turn up the volume to hear the narrowband signal.

2. Wideband Communication on a Narrowband Channel

– Received audio may be loud, distorted, or inaudible.
– Communications may work at a distance but no audio may be received when close to receiver.
– Usually the cause of mixed band communication problems.
– Caution, if you turn down the volume, narrowband communications may not be heard.

Temporary mitigation:

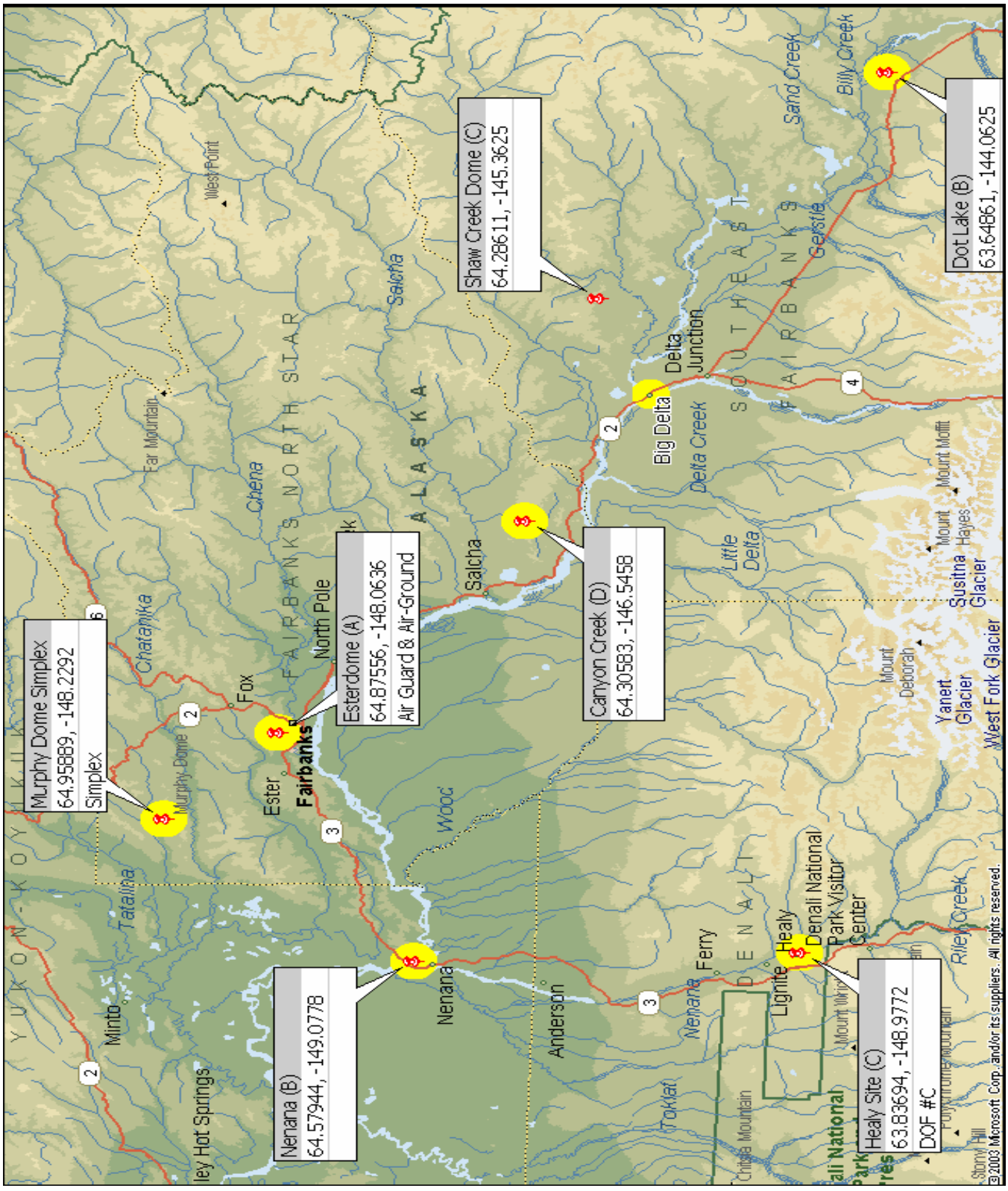
– Turn down the volume noting that you may not hear narrowband communications.
– Speak quietly into the wideband radio
  – Don't speak directly into the microphone of the wideband radio.

Programming Tips:

To change the bandwidth for your radio, you must program it for narrowband, plus enter the correct frequency. Entering the frequency with just 3 decimal places does not set your radio to wideband. The deviation is automatically changed when you program the bandwidth.

Please see the Division of Forestry Current Year Frequency Guide Book for all other frequency information

Fairbanks Area Repeater Sites



Note: This map does not show the Parks Chena Dome Repeater Site

Operations

Fairbanks Area Forestry Fire Operations personal are a group of experienced and well-qualified Initial Attack Firefighters. The technicians are qualified in roadside engine attack and helitack operations. Roadside, helitack, or both may respond to an incident, depending on the initial fire size-up. Twenty-one initial attack personnel are available five days per week. On weekends, staffing is determined based on the predicted fire danger. Dispatch is open daily from 8:00 AM to 6:00 PM. A duty officer is available after regular hours. During high fire danger days, the force may be augmented with trained emergency firefighters. The Alaska Fire Service B.L.M. smokejumpers are available from Fort Wainwright.

The main helibase is capable of handling three medium size helicopters, with overflow areas available on state-leased land at Fairbanks International Airport. An onsite 6,000-gallon fuel system provides jet fuel. Eleven engines, ranging in size from 100-gallon type 7 to 500 gallon type 3 engines, 2 4x4 crew cabs IA squad trucks make up the roadside fleet. Several flatbeds and pickups are used by the warehouse and support. Portable retardant systems are available that can readily be set up on remote airfields.

Daily Operations Schedule:
0930 State Wide Weather briefing
0945 State Tactical Teleconference
1000 Operations Reports for Duty, Start P.T.
1030 Daily engine & helitack assignments posted
1130 Morning Operations Briefing

Daily Briefing Schedule

TIME DAY	WHAT	WHERE	WHO ATTENDS
0930 M/W/F	AICC Fire WX	Teleconference	Dispatch/OPS Forman
0945 M/W/F or daily if situation warrants	Preposition	Teleconference	FMO/AFMO/OPS-Sup/LOG-Sup
1000 Daily	Dispatch Briefing	Dispatch	Dispatch Staff
1130 Daily	Operations Briefing	Training Room	All Ops/ Prev/ Helibase/Log-Sup

Initial Attack & Roadside Manning

One Siren for Roadside
Two Sirens for Helitack
Three Sirens for Both Roadside & Helitack

Initial Attack Resources

Identification	Type	Purpose	Cell Phone	Capacity
F-2	Crew Cab 4x4	IA Squad		
F-7	Crew Cab 4x4	IA Squad		
F-8	Pick-Up 4x4	Command		
F-9	Suburban	IA Squad		
F-72	7 - 4 x 4	Operations	378-1321	100 Gallon
F-75	6 - 4 x 4	Patrol – Prevention	378-9671	100 Gallon
F-76	7 - 4 x 4	Patrol – Prevention	378-9979	100 Gallon
F-77	7 - 4 x 4	Patrol – Prevention	378-9657	125 Gallon
F-33	3 - 4 x 4	Operations	378-1265	500 Gallon
F-34	3 - 4 x 4	Operations	378-1269	500 Gallon
F-35	3 - 4 x 4	Operations	378-1275	500 Gallon
F-36	3 - 4 x 4	Operations	378-1277	500 Gallon
F-65	6 - 4 x 4	Operations	378-1283	260 Gallon
F-66	6 - 4 x 4	Operations	378-1291	300 Gallon
F-67	6 - 4 x 4	Operations	378-1297	300 Gallon
Area Helicopter N59633	Bell 212	Helitack - 320 Gal Bucket		9 Passenger
Air Tankers State				
T-452	Type I	Convair 580 Air Tanker	Retardant or	3000 Gallon
T-455	Type I	Convair 580 Air Tanker	Water	3000 Gallon
T-264	Type 3	CL-215 Water Scooper	**Water Only**	900 to 1400
T-267	Type 3	CL-215 Water Scooper		Gallons
Alaska Fire Services	Smokejumpers	IA & EMT		
Jump 07 (N107BH)	Jumpship	Casa		Smoke
Jump 12 (N112BH)	Jumpship	Casa		Jumpers or
Jump 17 (N117BH)	Jumpship	Casa		Para-Cargo
Jump 66 (N266MC)	Jumpship	Dornier		

Engine and Aviation Water Sources

Engine & Tender Water Sources

District	Source	Location
Anderson	Private Well	284.5 Parks, 1 mile towards Clear, then right 5 miles to Anderson
Cantwell	Private Well	2 blocks east on Denali Hwy.
Chena Goldstream	10,000 Gallon Tank	Station. #1; 1 mile Murphy Dome Rd. Station. #2; 2 mile Chena Ridge Rd. Station. #4; Potter & Becker Ridge Rd.
Clear AFB	Hydrants	check in at fire station
Eielson AFB	Hydrants	Station. #1; bldg 1206 corner of Flight Line and Division
Ester	10,000 Gallon Tank	Old Nenana/Parks mile 350 next to weigh station.
Fairbanks	Hydrants	656 7th & 103 Aurora
Fort Wainwright	Hydrants	C in building 3004, south end of airport across from FAA tower. *open slowly or will set off sprinklers.
McKinley	3,000 Gallon Tank	Mile 230 Parks/East on Old Bypass Rd.
Moose Creek	350 GPM Well	NSVFD Sta. 5, 3477 Old Rich
Nenana	Hydrants/Tank/Well	Market and 3rd. St.
North Pole	Hydrant/Overhead	1st & Lewis behind Food Factory
North Star	350 GPM Well at each station	Station #1 Bradway Station #2 Bradway/Dennis Station #3 Hurst/Dawson Station #4 Dennis/Cooper Station #5 Moose Creek
Steese	40,000 Gallon Tank 20,000 Gallon Tank 20,000 Gallon Tank 20,000 Gallon Tank	Station #1 2 mile Farmers Loop Station #2 Steel Creek/Gilmore Tr. Station #3 Goldstream/Old Steese (check first for water) Steele Creek & Chena Hot Springs Road
Tri-Valley - Healy	15,000 Gallon Tank	248.5 mile Parks Hwy
Two Rivers	Private Well *	23 mile CHSR Behind Valley Center Store/Soft ball field
University	Hydrants	UAF Campus/College Utilities

NOTE:
1. There are “Draft Hydrants” located in some areas. These hydrants are pressurized with air. Be sure to bleed pressure off, and by slowly loosening hydrant caps, to prevent injury.

2. Some water sources have combination locks. Combinations are located in engine books.

3. There are numerous ponds for rotor wing dipping operations.

4. The CL-215’s have a process to determine when and where they get water.

5. ***Federal aircraft do not use retardant.***

Aviation Water Sources

These are not listed at this time; Contact dispatch.

Air Operations

Fairbanks Area Helibase Coordinates: 64 50 x 147 49, Elevation: 450 feet
FAI VOR 039 degrees for 5 nm.

The State maintains its own aircraft for detection, air attack, and administration. Fairbanks Area has a contracted Bell 212 helicopter for initial attack and support. An interagency retardant fleet of four aircraft is available from Ft. Wainwright. During high fire overload conditions, several contracted, interagency and state-owned aircraft can rapidly be moved into Fairbanks from other Areas. Several of these aircraft are capable of special missions, including paracargo, infrared mapping (Troll), aerial photography, and aerial firing. Large paracargo drops are available through cooperative agreements with the Alaska Fire Service on Ft. Wainwright. The 2009 season may see the trial use of drone aircraft as a fire resource in the Fairbanks Area.

Local Pilot Procedures

Supervision: Helicopter pilots are responsible to the Fire Management Officer or to the Helibase Manager. The Helibase manager will normally be on duty during flight hours to directly supervise the helibase operation.

Administration*:* Paperwork should be completed and approved by the Helibase Manager. For non-fire flights, the Helicopter Manager or Helibase Manager is responsible for obtaining appropriate charge codes for use of aircraft. When flight logs are completed or new pages needed, paperwork is turned into the Helibase Manager.

Standby: Pilots are required to be on standby as specified in their contract/offer. Pilots are provided with a lounge area for their use and are asked not to wait in the dispatch office.

Fueling: The pilot is responsible for proper fueling of the aircraft with Fairbanks Area Forestry personnel assisting. The pilot is required to be present when aircraft is being refueled.

Load Configuration/Assignment: Loads and assignments can change on an hourly or daily basis. The Helibase Manager will provide the pilot with all changes in loads/assignments.

Load Calculation: The Helibase Manager will fill these out for each flight. In the absence of the Manager, the Helicopter Foreman will complete the calculations with the pilot's approval.

Flight Hours: At end of shift please report your flight time to the Helibase manager.

Dispatch from FAF Base: The following procedure is used:

1 Blast on Siren--Roadside Call
2 Blasts on Siren-Helitack
3 Blasts on Siren--Roadside & Helitack

Dispatch: Dispatch must be advised by radio prior to all take-offs or landings at the Fairbanks Area Helibase.

AIR GUARD (168.6250 Transmit & Receive – Tone Guard 110.9 VHF-AM) is the primary statewide emergency frequency. It is programmed into all interagency hand-held radios and dispatch consoles. For interagency use, employ in the following manner:

1) Air to Ground, Air to Air, Ground to Air contacts for safety
2) Emergency air contact (when unable to contact anyone)
3) Emergency diversion of aircraft to higher-priority incidents

Air to Air: (**128.45**) All aircraft must monitor this frequency en route to and over all incidents, and should attempt to contact any other aircraft working the incident at least twelve nautical miles out. If no contact is made at 12 NM, proceed to 7 NM out and hold. Continue attempting to contact other aircraft on 128.45, and then on other possible frequencies. Hold at 7 NM until radio contact is made.

Air to Ground: Primary Flight Following Frequency. All aircraft will give a position update every **30** minutes on frequency **132.45** or another previously identified frequency. All aircraft contracted by the Fairbanks Area will notify dispatch on take off with the following information:

Tail #
Destination
Off Time
Purpose of Flight
Number of people on board (SOB'S)
Amount of useable fuel (FOB)
Estimated Time en Route (ETE)

Automatic Flight Following (AFF): Prior to using AFF arrangements must be made with dispatch. Fairbanks Area will not use FAA for initial attack.

Operational Information: The Helibase Manager will provide a copy of the daily MOAS and Tactical Operational Aircraft

Aircraft Fuel Caches

The Fairbanks Area maintains fuel caches during the fire season. These caches are located throughout the region. Aviation fuel in 55-gallon drums is available after May 15 of each year. A barrel pump and a bung wrench are needed to open the drums. Each barrel is clearly marked "State of Alaska, Division of Forestry Fire Fuel Cache." Pilots are required to contact the Fire Management Officer or Helibase Manager, when fuel is used so that it may be replaced. Dispatch will call Nenana Fuel Co. when fuel is needed in Nenana (907-832-5823). If needed, a 1,200-gallon fuel truck or 500-gallon fuel trailer can be positioned anywhere along the road system to act as a fuel cache. Additional fuel can be obtained at Denali National Park, or the USNPS fuel tank at Kantishna. Contact Dispatch beforehand. Dispatch will need to contact Denali National Park Dispatch Center.

FUEL CACHES	LAT/LONG	VOR/ DME	
Angel Creek	(65 01 x 146 13)	050 / 47	FAI VORTAC
Buck Mountain	(64 23 x 146 24)	091 / 49	FAI VORTAC
Clear Guard Station	(64 18 x 149 07)	156 / 17.4	ENN VORTAC
Nenana (Nenana Fuel Co.)	(64 32.84 x 149 04.44)	216 / 32	FAI VORTAC
USNPS Denali Park	(64 43.96 x 148 54.64)	171 / 68	FAI VORTAC
USNPS Kantishna	(63 32.50 x 150 59.64)	171 / 68	FAI VORTAC

Local Aircraft Hazards

The following is not an inclusive hazards list. There are numerous potential aviation hazards located within the Fairbanks Area Forestry protection boundary. These hazards include both on the ground such as geographical points / topography, potentially poor landing spots to radio towers as well as aerial hazards such as other aircraft, obscure visibility, and weather factors. The pilot has the ultimate safety responsibility for the passengers and the ship. The pilot and the helicopter manager have a shared safety responsibilities. The manager should not push the pilot to fly into unsafe, or hazardous conditions. On the other hand if the Helitack crew and the manager are uncomfortable with the flying conditions they should inform the Pilot. In this situation the pilot should try to look for other alternatives.

Any personnel who becomes aware of an aviation hazard or any hazard should immediately inform their supervisor. Their supervisor will inform the Helibase Manager and or the Fire Management Officer (FMO) who will then ensure that the rest of the employees are aware of the hazard and a hazard mitigation procedure is outlined. (As aviation hazards become known, Dispatch will update the list). See Fairbanks Area Forestry Aviation S.O.P. and Helitack Manual for more information.

1. The Fairbanks Area Helibase is located beneath the flight path of aircraft landing on **Runway 19R** at Fairbanks International Airport. **The Fairbanks tower must be contacted for traffic advisory prior to departure or landing.**

2. Helicopters departing from the helibase should be aware of the **loss of ground effect** over the river.

3. Helicopters departing from the helibase should be aware of the presence of canoes and boats on the river. All efforts should be made to **avoid upsetting boats with rotor wash**.

4. The river is used by float planes both up and downstream from the helibase.

5. Helicopters departing from the helibase should **avoid flying over houses across the river** as much as possible.

6. Due to the heavy populated surrounding area**, no sling loads will depart, or return to the helibase.**

7. Helicopters should be locked and valuables (headsets, etc.) removed after shift each night.

8. High tension electrical wires rise 100' above the river at the **University Avenue Bridge**. These wires are marked with orange aviation balls. Overhead wires are also located just off the helibase south end.

9. There is a boat ramp located on the southeast side of the Helibase. Although this is not a public access, there are times that the public or other agencies utilize this ramp.

10. At 5654 Chena Hot Springs Road (north side, mile 17.9) a type IV magazine for the storage of black powder.

11. Johnson Road, a plant for the production of Ammonium Nitrate and storage of other blasting supplies and agents.

12. The Intertie (high voltage transmission lines) between Anchorage, Healy and Fairbanks are located crossing the Tanana Flats. Secondary primary lines run mostly along or near the Parks Highway. The wires are marked with orange aviation balls. There are other electrical lines near homes, subdivisions, with a high

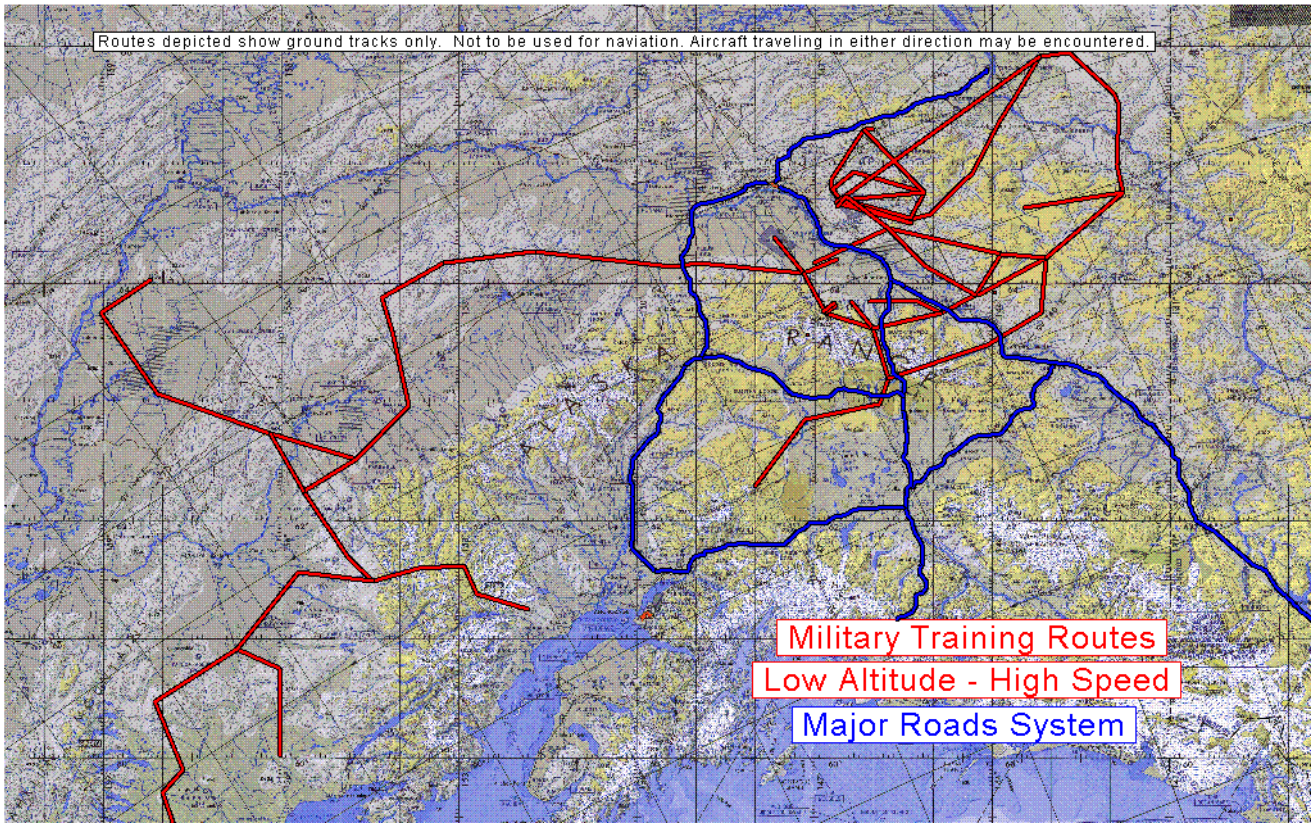
voltage lines to the Fort Knox Mine north of Fairbanks and to the southeast to Delta. Most of the residential lines are not marked with orange aviation balls.

13. Restricted Area 2206: Clear Air Force Restricted Area. The base is 78 miles southwest of Fairbanks on the Parks Highway (mile 283.5). This area is to be avoided because of radar frequency (RF) exposure. Possible damage and or interference to airborne radio due to high level radio energy in the vicinity of R2206.

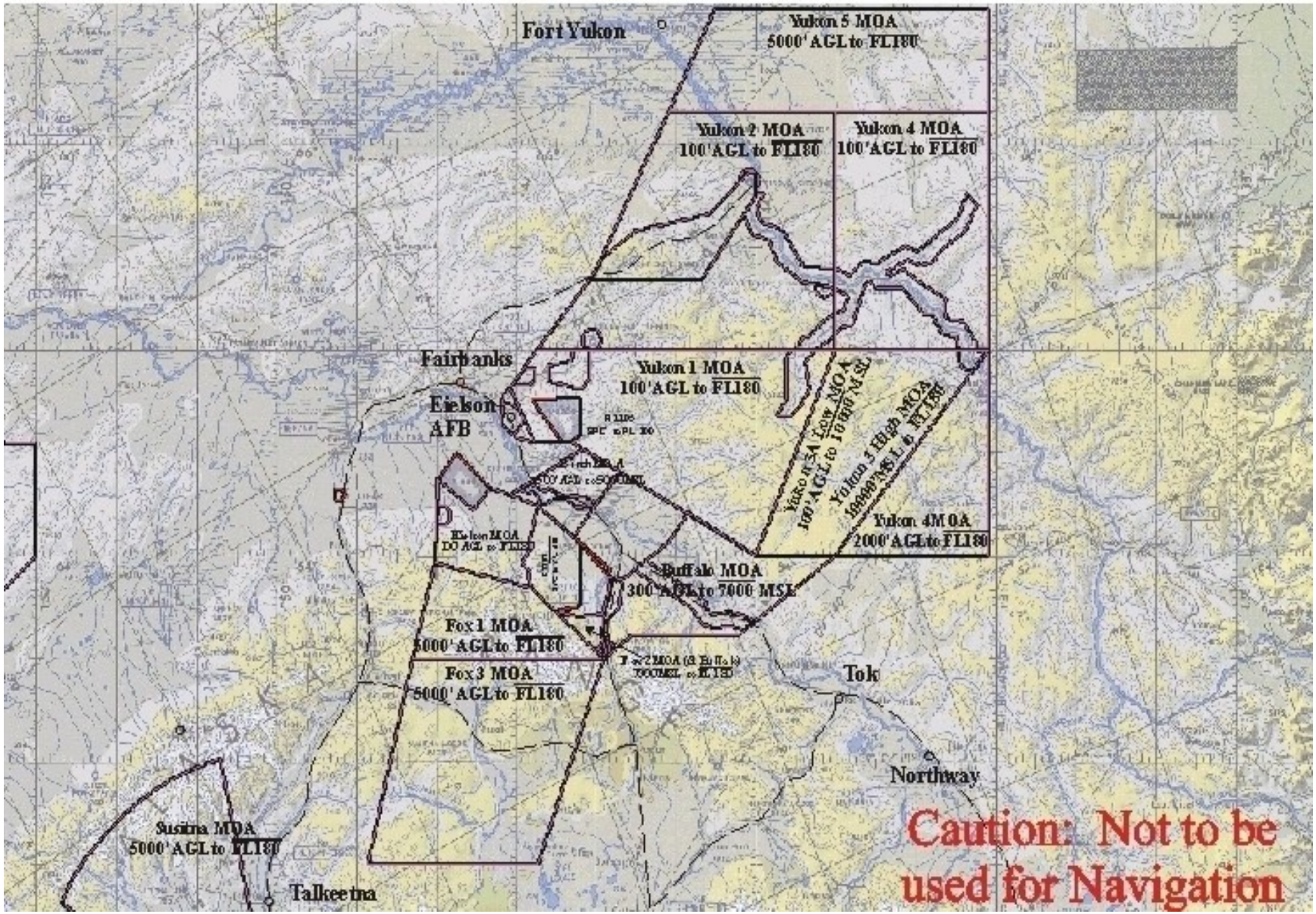
14. Poker Flat Research Range: The range is located approximately 30miles northeast of Fairbanks on the Steese Highway. Check with the nearest Flight Station for NOTAMS on airspace restriction during launch times.

15. Cope Thunder, Red Flag, and other Military air operations: Each morning Dispatch receives a teletype message which is copied and passed to Operations and the Helibase. The message outlines the Military Operations (MOAS) and Military Transportation Routes (MTRs) for that day. This is a generalized message and not an inclusive list. Pilots are responsible for contacting Range Control before entering MOAS, MTRs, and Restricted areas.

16. Local private and public airports: See Aviation S.O.P. for a list and attached map.



INTERIOR ALASKAN MILITARY SPECIAL USE AIRSPACE



Cooperating Fire Departments

Federal: The Alaska Fire Service's (AFS) primary base of operations is within the Fairbanks protection area and is utilized for initial attack support. Both manpower and aircraft are shared on a recurring basis. The Fairbanks Area Forestry's helicopter and helitack personnel may be used in support of AFS smokejumper operations.

Structure Fire Departments (FD/VFD): An extensive interface with rural fire departments occurs throughout a 14,000 square mile area. A cooperative agreement is in effect with fourteen fire departments within the Fairbanks Area. This agreement provides for a mutual response by both FD and Forestry within the VFD district.

State Forestry will determine if aircraft are used on an incident. If so, a "Unified Command" will be established with Forestry.

Communications: Responding unites will make initial contact with Fire Departments on **Fire Mutual Aid 1** (Tx 154.295 Rx. 154.295). IC / Unified Command will declare which operational and tactical frequencies will be used. All local cooperators in the Fairbanks North Star Borough are on the trunk radio system.

Fire Departments	Contact Name	Business Phone	Emergency Phone	Fax Number
Airport Fire Dept	Chief Mike Supkis	474-2539 / 2555	474-2530	474-2544
Anderson V.F.D	Chief Robert Thompson	(907) 582-2500	(907) 582-0911	(907) 582-2496
Cantwell Vol. Fire	Chief Dale Nord	(907) 768-2162	768-2982 Amb 768-2240 Fire	768-2990 (station–call 1st)
Chena-Goldstream Fire	Chief Jack Willard	479-5672	911	479-5858
Clear AFB Fire Dept	Chief Wes Brinkley	(907) 585-6432	(907) 585-6368	(907) 585-6217
Denali Park Office	FMO Larry Wettle	(907) 683-9555	683-9555	(907) 683-9640
Eielson AFB Fire	Chief James Didier	377-4156	377-4156	377-2738
Ester V.F.D.	Chief Cameron Wohlford	479-6858	474-7721	479-9883
Fairbanks City Fire	Chief Warren Cummings	450-6600	911	450-6666
Ft Wainwright Fire	Chief Russell Toms	353-7470	353-7470	353-9955
McKinley VFD	Chief Ron Dane	(907) 683-2400	474-7721	(907) 683-2903
Nenana Fire Dept.	Chief Gene Jensen	(907) 832-5632	(907) 832-1911	(907) 832-5503
North Pole Fire Dept.	Chief Buddy Lane	488-2232	911	488-3747
North Star VFD	Chief Jeffrey Tucker	488-3400	911	488-6118
Salcha Rescue Squad	Chief Rob Weathers	488-5274	911	488-4525
Steese Area VFD	Chief Mitch Flynn	457-1508 / 374-7685C	911	457-1512
Tri-Valley Fire Dept.	Chief Sean Fielding	683-2223	474 -7721	(907) 683-1351
University Fire Dept.	Chief Edie Curry	474-7681	911 / 474-7721	474-5999

****** Aviation ******

FAA Tower		474-0452		479-4650
Ft. WW Tower		353-9206		353-7425
Flight Services		474-4536		474-0766
Eielson Range Control		377-3125 (800) 758-8723		377-1377
Nenana Fuel Co.	Jet fuel for Helicopter	832-5445	832-5676 (home)	

****** Dispatch Centers ******

Dispatch Centers	Contact Name	Business Phone	Emergency Phone	Fax Number
AK Railroad	Kathy Craft 460-1651 Wk # 458-6070	(907) 265-2421	(907) 265-2421	(907) 265-2352
Airport Dispatch		474-2530/474-2566	474-2530	474-2556
Denali Park Dispatch		(907) 683-9555	(907) 683-2276	(907) 683-9640
Fairbanks City (FECC)		Secret # 450-6505	911	452-1588
GVEA Dispatch		452-4832 trouble line	451-6474 Fire/PD	458-6370
University Dispatch		474-7721	474-7721	474-7377
****** Alaska Fire Service ******				
AICC Initial Attack	Jon Gregg	356-5670		356-5678
Galena Zone	Marlene Eno-Henderson	356-5626	356-5628 / 5626	356-5556
In Galena	Station Manager	(800) 237-3644 or (907) 656-1222		(907) 656-1702
Upper Yukon Zone	Skip Theisen	356-5558	356-5555 IA	356-5556
In Ft. Yukon	Station Manager	(800) 237-3652 or (907) 662-2378		(907) 662-2636
Tanana Zone	Dave Jandt	356-5570	356-5554 IA	356-5556
Military Zone	Tammy DeFries	356-5875	356-5554 IA	356-5556
Smokejumper Box		356-5540 / Para Cargo 356-5534		356-5548
A.F.S. Duty Office		356-5660		356-5646

****** Law Enforcement ******

Law Enforcement	Contact Name	Business Phone	Emergency Phone	Fax Number
Alaska State Troopers		451-5100 / 5140	911	451-5165
Alyeska Pipeline Security		488-9495 Nordale Yard Only	450-5707	450-5631
AK RR Investigation		458-6079 Yard Off. 458-6022		458-6034
BLM Law Enforcement	Ed Lee	474-2367	378-5683C 496-7340P	474-2284
Fairbanks Police	Dispatch	450-6507	911	
North Pole Police		488-6902	911	
State Park Rangers		488-6902	911	488-6902
University Police		474-7721	911	474-5555

Other Contacts	Contact Name	Business Phone	Emergency Phone	Fax Number
State Fire Marshall	Dep. Tom DePeter	451-5200		451-5218
FNSB Director Emergency Ops	Dir. David Gibbs	459-1221	450-6585 Disp	459-1119
FNSB Emergency Ops	Mgr. Tory Clide	459-1219		
FNSB Haz Mat Team	Chief Jim Maltby	450-6585/388-7633C	911 (City)	452-1588 Disp.
Denali Borough Emergency Operations	Rusty LaSalle	907-683-1330	907-460-1438	907-683-1340
College Utilities		479-3118	24 hr Emer # 479-2760, 3118	
D.O. Transportation		451-2200		

Alaska Fire Management Zones

Fairbanks Area Forestry Fire Protection Area

North along the Elliott Highway to the Tatalina River at 45 mile.

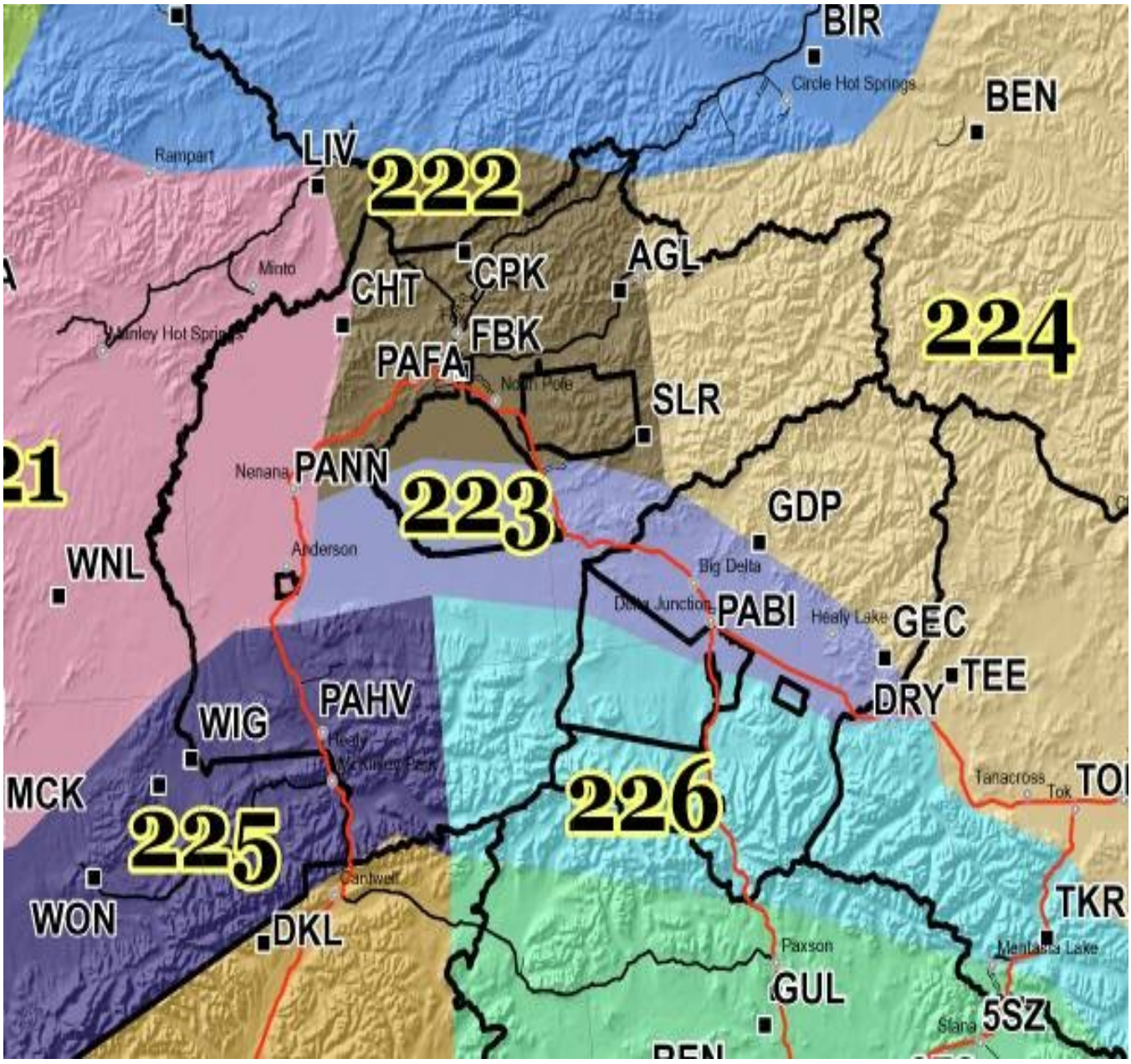
South along the Parks Highway to Summit Lake and the Denali/Mat-Su Borough boundary at 202 mile.

South along the Richardson Highway to the Fairbanks North Star Borough boundary at 295 mile.

East along the Steese Highway to the Fairbanks North Star Borough boundary at Twelve Mile Summit, 85.5 mile.

Along the Denali Highway starting at Cantwell, mile 210 on the Parks Highway, we cover both sides of the Denali Highway to Lily Creek, mile 21.9. From Lily Creek to Canyon Creek, mile 39, Fairbanks covers just the north side of the highway. Mat-Su Area covers the south side.

Fire Weather Zones



Zone 221: Nenana, Anderson, Clear AFB
Zone 222: Fairbanks, Chena Hot Springs Road, Ester
Zone 223: Salcha, Harding Lake, Birch Lake
Zone 224: Far East (North of the Salcha River and South of the Middle Fork of the Chena River)
Zone 225: Healy, Denali National Park
Zone 226: Japan Hills

Medical

Fairbanks Area follows the protocols set forth in the Alaska Fire Medic Guidelines, for incidents off base. EMT are assigned to fires by IC request or when 3 crews are on an incident. There is a Medical Plan in Dispatch for on base incidents.

Process: After seeing to the care of the sick or injured, please confirm that the Duty Officers is notified. The Area Administrative Clerk will meet the individual at the hospital to take care of the paper work required.

Hospitals & Clinics: There are two hospitals located in the Fairbanks Area and several clinics. Fairbanks Memorial Hospital located in Fairbanks and Bassett Army Hospital located on Fort Wainwright. There are clinics located in Nenana, Healy, Cantwell, and Eielson Air force base. Military facilities are for military personnel and dependants only.

Ambulances: The Fairbanks North Star Borough has area wide ambulance coverage. All other communities and highways are covered by local ambulance services.

Air Medivacs: Fairbanks Area Rotorwing can be use in situations which warrant transportation and/or evacuation of the sick and injured. The Military Assistance to Safety and Traffic (MAST) has three Black Hawk helicopters stationed at Fort Wainwright. These are military priority first. There are two private Air Ambulance Services located at Fairbanks International Airport, both operate fixed wing aircraft. Guardian Life Flight, and Warblows Air Ventures Medical.

Burn Treatment: Fairbanks Memorial Hospital is set for a two unit burn center. They can accommodate three more in ICU. Outpatient or short-stay burns may be treated in Alaska hospitals. Serious burns will be stabilized and then medevaced to the Regional Burn Center at University of Washington Harborview Hospital in Seattle.

HOSPITAL	HELIBASE	ER ADDRESS	ER CONTACT
Fairbanks Memorial	64 49.9 X 147 44.5	1650 Cowles St.	*155.160 458-5555-& press 2
Bassett Army	64 46 X 147 39	Ft. Wainwright	*155.160 353-5143

* need to contact dispatch, dispatch will advise ER to activate emergency room radio.

Process: Please make sure that the Duty Officers is notified if an incident happens when dispatch is closed. The Area Administrative Clerk will meet the individual at the hospital to take care of the paper work required.

Fire Stores and Supplies

Fairbanks Areas Fire Cache resides in the State Fire Warehouse located in Fairbanks. All supplies and other draws from the warehouse must be accompanied by a resource order.

N.U.S.
After apparatus have received their N.U.S., any replacement of supplies and equipment must be accompanied with a fire number or an approved charge code.

E.F.F.
All E.F.F. must place their request for warehouse items through a State of Alaska Forestry Technician. The technician will prepare the information for a resource order.

When crews are being mobilized a State of Alaska Forestry, a technician will facilitate the crews mobilization by coordinating information flow between the crew, dispatch, and the warehouse.

Fire Logistic Orders

- After Initial Attack, please place orders once or twice a day.
- Please prioritize your orders.
- For paracargo, it is imperative that you prioritize your order. Due to time, aircraft configuration, weight, fuel, priority items will go first (don't be caught short of essential supplies).

Fueling Vehicles
Each state vehicle contains a credit card. Please see a technician for proper procedures. Please place the credit card receipt in the receipt envelope (envelopes are located in each vehicle). Please print. Please fill out the **FUEL VEHICLE LOG** appropriately, put fire number or appropriate charge code number on the fuel receipt.

Administration

Timekeeping
ALL out-of-area or EFF / AD personnel working in the Fairbanks Area are required to document hours worked on a Crew Time Report SF-261 (CTR), and submit it to their supervisor for authorization daily.

Fairbanks Area administrative staff will complete Emergency Firefighter Time Reports (OF-288) for each individual. Before leaving the area, individuals are to check with the administrative staff to review, close and sign their OF-288.

Travel

Rental Vehicles
Rental vehicles must be returned to Fairbanks Area Dispatch or the State Logistics Transportation Unit. Do not take and leave vehicles in other locations or at the airport.

Meals & Lodging

All out-of-area personnel are entitled to meals and lodging while assigned to Fairbanks Area for suppression or as a preposition resource only. All meal and lodging for other purposes must be reimbursed through their travel authorization system.

Meals
All DNR personnel are entitled to Meals & Incidental Expenses (M&IE) as stated in the union contract. These will need to be submitted on a TA through your home unit. **All non-DNR personnel will be subsisted**. Meal coupons are issued in dispatch. The coupon is **Non-Transferable** from personnel to whom it was issued valid only for the dates authorized and within the Area/District issued, and **Valid Only** for:

- Amount stamped on the face of the coupon;
- Use only on the date listed on the front;
- Use only by Forestry fire personnel printed on front;
- Use only at approved vendors;
- Food items and non-alcoholic beverages.

Meal Chits may not be used to purchase or pay for Gratuities, Alcoholic Beverages, Non-Food Items or Taxes.
Meal chit limits for 2009 are:

Breakfast	**$12.00**
Lunch	**$16.00**
Dinner	**$22.00**

If you purchase any non-food items, please pay for them separately. Tickets **do not cover alcoholic beverages, tips, or any amounts over the allowable maximums**.

Please see dispatch for a list of current approved vendors in the Fairbanks area. If the vendor's name is not on the list, check with them first to see if they will accept the coupon.

Lodging

Dispatch will make lodging reservations. The hotel will direct bill the State. The State does not pay tax. **Long distance phone calls and movies are not included**. Please notify dispatch of your intention to check out, as hotel rooms are at a premium during the fire season. Upon departure, be sure to check out with the front desk and sign all bills.

Dispatch will provide a list of approved lodging vendors.

The Canadian Forest Fire Danger Rating System (CFFDRS) as used by State Forestry is based on inputs similar to the U.S. National Forest Fire Danger Rating System (NFFRDS). The inputs are Air Tempature, Humidity, Wind Speed, Wind Direction, Precipitation,

CFFDRS (CANADIAN FOREST FIRES DANGER RATING SYSTEM)

Unlike the lower-48 western forests, the surface of interior Alaskan forests is not dirt but is comprised of a thick matt of vegetation in varying stages of growth and decomposition.
Alaska utilizes the Canadian Forest Fire Danger Rating System (CFFDRS) to determine daily Fire Weather Indices (FWI's).

The FWI tracks effects of weather on forest surface and sub-surface fuels. In doing so, it gives an estimation of potential fire danger and fire behavior in the area based on the moisture content of three classes of these fuels. The FWI system is probably best described as a bookkeeping system in which, for a particular weather station, fuel moisture is added in the form of precipitation and subtracted in the form of drying. Precipitation is the only input component that will add to fuel moisture while the other inputs of temperature, relative humidity, wind speed, and time of year control the rate of drying.

The system consists of six components; three primary indexes, or codes, representing fuel moisture for each of the three fuel layers, (Fine Fuel Moisture Code [FFMC] Duff Moisture Code [DMC] Drought Code [DC]), two intermediate indexes representing rates of spread and fuel consumption, (Initial Spread Index[ISI], Buildup Index [BUI]), and a final index representing fire intensity as energy output per unit length of fire front (Fire Weather Index [FWI] Weather readings taken at 12:00 solar noon local standard time (not daylight savings time) at weather stations for temperature, rainfall, relative humidity, and wind speed are used as inputs into a computer program that calculates the six indices for each station.

1. FFMC represents the moisture content of litter and cured fine fuels, < -2 cm deep. It expresses the ease of ignition and fuel flammability. FFMC is sensitive to daily changes in temperature, rainfall, relative humidity, and wind speed. Time lag is 2/3 of a day, which means that it takes 16 hours for the fine fuels to react to a change in the weather.

2. DMC represents the moisture content of loosely compacted, decomposing organic matter 2 - 10 cm. deep, which determines resistance to control. DMC is sensitive to temperature, rainfall, and relative humidity. Time lag is 12 days.

3. DC represents the deep layer of compacted organic matter, 10+ cm. deep, which determines resistance to extinguishment. It indicates seasonal drought and smoldering fires in deep duff or large logs. DC is sensitive to temperature and rainfall. Time lag is 52 days.

4. ISI represents a numerical rating of fire spread immediately after ignition without the influence of variable fuel quantity (the fuel type isn't considered). It fluctuates with wind speed and time of day. ISI is a combination of FFMC and wind.

5. BUI represents total fuel available for combustion. In the absence of rain, BUI fluctuates little throughout the day. BUI is a combination of DMC and DC.

6. FWI represents the intensity of a spreading fire. FWI is a combination of ISI and BUI. The chart below shows the relationship of the numbers that are generated for the indices and fire danger levels in Alaska.

	FFMC	DMC	DC	ISI	BUI	FWI
Low	0-80	30-70	<150	0-2	30-70	0-3
Moderate	81-86	70-80	150-350	2-5	70-80	4-13
High	87-90	80-90	350-400	5-10	80-90	14-23
Very High	90-92	90+	400+	10+	90+	24-28
Extreme	93+	90+	400+	10+	90+	29+